

Case 3386

***Pseudocoenia* d'Orbigny, 1850 (Coelenterata, Scleractinia): proposed conservation of usage by the designation of a lectotype for the type species**

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Abstract. The purpose of this application, under Article 74.1 of the Code, is to conserve the name *Pseudocoenia* d'Orbigny, 1850 in its accustomed usage by designating a new lectotype for its type species *Pseudocoenia bernardina* d'Orbigny, 1850. The present lectotype of the type species contradicts the original description of the type species as well as the concept of the genus as indicated by its author and as currently used.

Keywords. Nomenclature; taxonomy; Coelenterata; Scleractinia; *Pseudocoenia*; *Pseudocoenia bernardina*; Jurassic–Cretaceous; corals.

1. The genus *Pseudocoenia* (Coelenterata, Scleractinia, STYLINIDAE) was established by d'Orbigny (1850, p. 33). His original diagnosis of the genus is short but to the point for people who know Mesozoic corals: 'Ce sont des *Cryptocoenia* à huit systèmes, au lieu de six' [It is a *Cryptocoenia* with eight systems instead of six]. *Cryptocoenia* was established earlier by d'Orbigny (1849, p. 7) as a '*Tremocoenia*, sans columelle styloforme' [a *Tremocoenia* without any styloform columella].

2. The genus *Pseudocoenia* was characterised as a *Cryptocoenia* with eight instead of six septal systems, i.e. the number of septa in one generation (or cycle) is eight or a multiple (16, 32) of eight. When the genus was established, d'Orbigny (1850, p. 34) listed seven species: *Pseudocoenia suboctionis*, *Pseudocoenia bernardina*, *Pseudocoenia ramosa*, *Pseudocoenia digitata*, *Pseudocoenia octonis*, *Pseudocoenia elegans* and *Pseudocoenia ramosa*. In some cases the presence of eight septal systems is repeated in the species diagnosis. Currently a total of 23 Jurassic (Lathuilière, 1989) and one Cretaceous species (Löser, 2000) are assigned to the genus. The genus is widely distributed in the Late Jurassic and is rare in the Early Cretaceous. All seven originally assigned species have equal claim to be designated as the type species, since there is no Article in the Code which gives priority to the first species in the list.

3. The type species of *Pseudocoenia* was designated by Wells (1936, p. 128) according to Article 69.1 of the Code (Type species by subsequent designation): *Pseudocoenia bernardina* d'Orbigny, 1850 (p. 34). The type locality according to d'Orbigny is 'France, Landeyron'.

4. *Pseudocoenia bernardina* d'Orbigny, 1850 is characterised as 'Espèce voisine de l'*octionis* par ses huit chambres aux cellules, mais dont celles-ci sont d'un tiers plus

petites' [species close to *octonis* by its eight chambers in the cell, but these are one third smaller].

5. Four syntypes of *Pseudocoenia bernardina* d'Orbigny, 1850 exist in the Coll. d'Orbigny, Muséum National d'Histoire Naturelle (MNHN) Paris:

- (1) MNHN (Paris), typothèque, R9199 (ex Coll. d'Orbigny 4472): '*Pseudocoenia bernardiana* d'Orbigny' Corallien, Landeyron (Ain); figured in Cottreau, 1931, pl. 61, fig. 6; small specimen with one polished surface. Septa in a decamerall system. Styliform columella.
- (2) MNHN (Paris), Coll. d'Orbigny, 4472 no label; Landeyron (Ain); poorly preserved small specimen without polished surface which possibly belongs to the same species as R9199.
- (3) MNHN (Paris), Coll. d'Orbigny, 4472a; no label; Tonnerre (Yonne); a mould of a plocoid coral.
- (4) MNHN (Paris), Coll. d'Orbigny, 4472b; no label; Châtel-Censoir (Yonne); a large specimen with a thin section. Septa in an octomerall system. No columella.

6. From these syntypes, Wells (1936, p. 128) designated the specimen of number 4472 as lectotype. He excluded the specimens numbered 4472a and 4472b by writing 'Type No. 4472 [non 4472a, b]'. Wells was probably influenced by (1) this specimen was depicted by Cottreau (1931), who first illustrated – at least in part – the fossil corals of the d'Orbigny Collection, (2) the identical type locality to the locality indicated by d'Orbigny, and (3) the opinion expressed by other authors, like Milne-Edwards & Haime (1851, p. 78), that *Pseudocoenia* was a junior synonym of *Stylina* Lamarck, 1816. The last has to be seen in a historical context. Milne-Edwards and Haime believed that all '*Stylina* without columella' were only poorly preserved and that the absence of the columella was caused by an 'accident dependent on the process of fossilisation'. Milne-Edwards and Haime saw no reason why corals comparable to *Stylina* but without columella should be separated. Milne-Edwards (1857, p. 235) mentioned the eight systems in *Pseudocoenia* (not ten, as in the lectotype designated by Wells), but did not see any reason why *Pseudocoenia* or analogous genera (such as the above-mentioned *Cryptocoenia*, among other forms without columella) should be regarded as being different from *Stylina*.

7. Wells's designation contradicts (1) d'Orbigny's diagnosis of the species *Pseudocoenia bernardina* d'Orbigny, 1850, (2) the definition of the genus *Pseudocoenia*, and (3) most of the originally included species, as far as type material is available. The genus *Pseudocoenia* in its accustomed usage is understood as belonging to stylinids without columella, and with short and/or rudimentary septa in symmetry of eight. The current lectotype of *Pseudocoenia bernardina* d'Orbigny, 1850 belongs to a stylinid genus (i.e. *Stylina*) with ten septal systems and a styliform columella. When Wells (1936) designated the lectotype, he did not comply with d'Orbigny's intention (1850). Instead of admitting a coral comparable to *Cryptocoenia* but with an 8-part septal symmetry, Wells obviously sought to synonymize genera, including *Pseudocoenia*. *Pseudocoenia* is still in use in recent literature in its original understanding; its synonymy with *Stylina* is widely ignored (Beauvais, 1964; Eliášová, 1981; Errenst, 1990; Helm et al., 2003; Helm, 2005; Kuzmicheva, 2002; Liao & Xia, 1994; Pandey & Fürsich, 2003; Roniewicz, 1966, 1976; Turnšek, 1972).

8. Alloiteau (1948, p. 704) revised the genus *Pseudocoenia*. The proposed designation of *Pseudocoenia suboctonis* d'Orbigny, 1850 as the type species is invalid being

preceded by Well's designation. Alloiteau based his investigations on type material of *Pseudocoenia suboconis*, emending the characteristics of the genus. He was followed by Beauvais (1964). Later Roniewicz (1966, 1976) and Eliášová (1981) modified the generic concept and also accepted corals with symmetry other than eight. In the past fifteen years this has caused some confusion, mainly when dealing with Cretaceous corals, where one and the same species has been successively assigned to *Adelocoenia* d'Orbigny, 1849, *Convexastrea* d'Orbigny, 1849, *Cryptocoenia* d'Orbigny, 1849, *Cyathophora* Michelin, 1842, *Orbignycaenia* Alloiteau, 1948 or *Pseudocoenia* d'Orbigny, 1850.

9. In order to conserve the name *Pseudocoenia* d'Orbigny, 1850 in its accustomed use, it is proposed that all previous type fixations for its type species *Pseudocoenia bernardina* d'Orbigny, 1850 be set aside and that a lectotype consistent with current usage be designated; a suitable specimen would be specimen 4472b, Coll. d'Orbigny, MNHN (Paris).

10. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all previous type fixations for the nominal species *Pseudocoenia bernardina* d'Orbigny, 1850 and to designate specimen 4472b, Coll. d'Orbigny, MNHN (Paris) as the lectotype;
- (2) to place on the Official List of Specific Names in Zoology the name *bernardina* d'Orbigny, 1850, as published in the binomen *Pseudocoenia bernardina* and as defined by the lectotype 4472b, Coll. d'Orbigny, MNHN (Paris) designated in (1) above.

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References

- Alloiteau, J. 1948. Polypiers des couches albiennes à grandes trigonies de Padern (Aude). *Bulletin de la Société Géologique de France. Sér. 5*, **18**: 699–738.
- Beauvais, L. 1964. Étude stratigraphique et paléontologique des formations à madréporaires du Jurassique supérieur du Jura et de l'Est du Bassin de Paris. *Mémoires de la Société Géologique de France. N.S.*, **43**: 1–287.
- Cottreau, J. 1931. Types du prodrome de paléontologie stratigraphique universelle (8). *Annales de Paléontologie*, **20**(1): 133–172.
- Eliášová, H. 1981. Sous-ordre Stylinina Alloiteau, 1952 (Hexacorallia) des calcaires de Stramberk (Tithonien, Tchécoslovaquie). *Sbornik geologických věd, Paleontologie*, **24**: 117–133.
- Errenst, C. 1990. Das korallenführende Kimmeridgium der nordwestlichen iberischen Ketten und angrenzender Gebiete (1). *Palaeontographica. Abt. A*, **214**(3/6): 121–207.
- Helm, C. 2005. Riffe und fazielle Entwicklung der florigemma-Bank (Korallenoolith, Oxfordium) im Süntel und östlichen Wesergebirge (NW-Deutschland). *Geologische Beiträge Hannover*, **7**: 3–339.
- Helm, C., Reuter, M. & Schülke, I. 2003. Die Korallenfauna des Korallenooliths (Oxfordium, Oberjura, NW-Deutschland): Zusammensetzung, Stratigraphie und regionale Verbreitung. *Paläontologische Zeitschrift*, **77**(1): 77–94.
- Kuzmicheva, E.I. 2002. Morfologiya skeleta, sistema i evolyutsiya skleraktinii [Skeletal morphology, systematics and evolution of Scleractinia]. *Trudy Paleontologicheskogo instituta*, **286**: 1–211.

- Lathuilière, B.** 1989. *Répertoire objectif des coraux jurassiques*. 76 pp. Presses universitaires, Nancy.
- Liao, Wei-hua & Xia, Jin-bao.** 1994. Mesozoic and Cenozoic scleractinian corals from Tibet. *Palaeontologia Sinica (Zhongguo-gushengwu-zhi)*, **184**: 1–252.
- Löser, H.** 2000. *Répertoire of Species. Catalogue of Cretaceous Corals*, vol. 1. 137 pp. CPress Verlag, Dresden.
- Milne-Edwards, H.** 1857. *Histoire naturelle des coralliaires ou polypes proprement dits (1, 2)*. viii, 326 pp., 633 pp. Librairie encyclopédique de Roret, Paris.
- Milne-Edwards, H. & Haime, J.** 1851. A monograph of the British fossil corals (2): Corals from the oolitic formations. *Palaeontographical Society monographs*, **5**: 74–146.
- Orbigny, A. d'.** 1849. *Note sur les polypiers fossiles*. 12 pp. Masson, Paris.
- Orbigny, A. d'.** 1850. *Prodrôme de paléontologie stratigraphique universelle des animaux mollusques et rayonnés (2)*. 428 pp. Masson, Paris.
- Pandey, D.K. & Fürsich, F.T.** 2003. Jurassic corals of east-central Iran. *Beringeria*, **32**: 3–138.
- Roniewicz, E.** 1966. Les madréporaires du Jurassique supérieur de la bordure des monts de Sainte-croix, Pologne. *Acta Palaeontologica Polonica*, **11**(2): 157–264.
- Roniewicz, E.** 1976. Les scléactiniaires du Jurassique supérieur de la Dobrogea centrale Roumanie. *Palaeontologia Polonica*, **34**: 17–121.
- Turnšek, D.** 1972. Zgornjejurske korale iz južne Slovenije. *Razprave Slovenska akademija znanosti in umetnosti*, (4)**15**(6): 147–265.
- Wells, J.W.** 1936. The nomenclature and type species of some genera of recent and fossil corals. *American Journal of Science*, (5)**31**(182): 97–134.

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